

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as "The aggravation" (as quoted in "The Dragger" by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

"You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.'" (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. "Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul." (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARRAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as “The aggravation” (as quoted in “The Dragger” by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

“You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.” (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. “Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul.” (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.

A Century of Progress and Innovation: The New Bedford Fishing Fleet

Written by Justin Demetri

Beginnings

Modern fishing history in New Bedford began around 1900, during the final chapter of the city's famed whaling industry. It started humbly, influenced by the other local south shore fleets like Provincetown. At that time, the Cape Cod fishermen had a fleet of small flounder draggers that towed small, primitive nets on the sandy bottom. In the warmer months these fishermen often would switch their gear to target migratory fish like mackerel and swordfish. During the spring and summer fishermen turned to seining or netting for mackerel or swordfishing by harpoon.

Early in the 20th century, Edgartown fisherman began enlarging their traditional catboat designs and adding bowsprits. These larger vessels engaged in the southern mackerel fisheries off Virginia in the spring. When swordfish began migrating north in the summer, they used their bowsprits as pulpits to harpoon swordfish between southern shoals lightship and Georges Bank.

New Bedford's early fishing fleet was similar, consisting of small sloops and catboats, averaging 25-30 feet. They originally worked short trips, mackerel seining, swordfishing or hand-lining for groundfish. The catboats, designed to be worked from the cockpit, were also used for bay scalloping.

Some of these early New Bedford fishing vessels included HESTER, Captain Joe Marshall Silveira and NATALIE, owned by Frank Butler. These were of the large catboat type. Another early New Bedford fishing vessel was Captain John Sater's VIKING, a schooner-rigged "well smack" that brought in live codfish to Fulton market in New York during most of the year and went swordfishing in the summer.

In 1909, Captain Dan Mullins began a series of innovations for which he would later be remembered as the father of modern fishing in New Bedford. In that year he replaced his catboat DASHING WAVE, with the Maine-built sloop EDNA J. MORSE. With a small auxiliary engine, Mullins used the MORSE as a "flounder dragger." Originally it used a beam trawl, where a wooden beam held the mouth of the net open. This was the first step in the beginning of New Bedford's dragging fleet. By the next year, Captain Mullins began experimenting with a primitive otter trawl on the MORSE. It is believed that he learned the technique from fishermen on Long Island, New York. (Morry Edwards, "Fisherman's Sea Tractor" *WoodenBoat* #79)

Chester F. Hathaway established a machinery company "... in a small shed back in 1910 at Elm and Water Streets in New Bedford..." (*Fishing Gazette* Volume 67, 1950). Originally focused on servicing automobiles, Hathaway built much of Dan Mullins' early trawl gear.

On the eve of World War I, New Bedford's fleet of small vessels began growing in size. Dan Mullins' ANNA was considered the first “decked schooner boat” in New Bedford. This signaled a transition from the small catboats, which were fished from the large cockpit, to larger vessels with a full working deck. ANNA was quickly followed by the HELEN MURLEY. Besides Captain Mullins, other “captain-owners” from this period included Captains Lynch, Murley, Doucette, Joe Dutra and Manuel Avila.

The opening of the Cape Cod Canal in 1914 allowed easier access to the Boston market for New Bedford's growing fleet. During these early years, New Bedford's was not a major landings port. Much of the fish caught by New Bedford fishermen was sold in Boston or at New York's Fulton Fish Market. However, that would change as the fleet and its prosperity grew.

During World War I, the North Atlantic fishing fleet was subject to raids by German submarines. New Bedford's fleet, still in its infancy, was not spared. Swordfishermen Bob Jackson and Frank Lynch had their vessels attacked by German U-Boats.

Immediately after the war, New Bedford fishermen began looking toward the future. Unlike other ports with a long tradition of large all-sail fishing fleets, New Bedford was quick to utilize the latest innovations in machinery and fishing technology.

Arrival of the Eastern-rig Dragger

In 1919 Captain Dan Mullins had an 81 foot vessel built by Wilbur Morse in Thomaston Maine. Named the MARY, this vessel was the first of what would be later known as an Eastern-rig dragger. This auxiliary schooner-dragger was powered by a small diesel engine, and was the first of its type to use the gear and configuration that would be widely adopted by the New England fleet over the next few decades. MARY was originally schooner rigged, and carried a full set of sails, especially during swordfishing season. However, Captain Mullins re-rigged her as a ketch (smaller mast aft) which better suited the new style of fishing. Many of the small and medium sized draggers to come would adopt this rig.

Although the vessel itself was essentially an auxiliary schooner, MARY was the first small vessel to otter trawl using gallous frames: Large metal brackets mounted along the starboard rail used in raising and lowering the otter doors and net.

Previous to this innovation, early draggers (small vessels that used either beam or otter trawls) used a pair of booms to set the net. The smaller sloop-rigged vessels often towed their nets from the mast-head. Another first by the MARY was the use of a two-headed winch, a precursor to the larger drum winches draggers would adopt in the 1920's. Like many great innovators, Captain Mullins didn't necessarily invent, instead he combined and refined various pre-existing elements into something completely new.

This was a pivotal moment in fishing technology as now small, privately owned vessels could fish like the big “beam trawlers” out of Boston (which were actually otter trawlers,

but called beam trawlers because of their size and design). These vessels, usually built of steel, in excess of 250 gross tons and powered by steam engines, were far beyond the means of anyone save the large fishing companies of Boston. The MARY demonstrated that for a relatively modest investment, a “captain-owner” or a small company could see impressive returns in a short time. The MARY cost Captain Mullins approximately \$22,000. After her first two trips dragging for yellowtail flounder, the vessel stocked \$7800. (Edwards: Fisherman's Sea Tractor)

Although he had essentially created the Eastern-rig dragger, Captain Mullins was not finished. He would continue to help refine both the fishing gear and the vessels that would make up the New England fishing fleets for many decades.

Meanwhile, Chester F. Hathaway, now in business as Hathaway Machinery Company, began producing deck equipment and winches for fishing vessels like MARY. Hathaway became an early leader in this field and helped other New Bedford fishermen adopt the Eastern-rig dragger.

The Expanding Fleet

The 1920's saw both endings and beginnings in New Bedford. The whaling industry came to a close with the final voyage of the schooner JOHN R. MANTA. However, this was also the start of a build-up of the fishing fleet that would continue into the 1940's.

Captains Hayes, Keeping, Nicodemus, Mike Smith, Ambrose Smith, Sandy Smith, Fennessy, and Anderson all played key roles in this period of expansion.

While the early New Bedford fleet began to grow, the shore side aspects of fishing were not yet ready to handle the ever increasing landings. New Bedford fish was still being sold to other ports until buyers and processing facilities could handle the supply. Once again Captain Dan Mullins spearheaded this effort along with Captain Frank Parsons. Together they established the Acushnet Fish Corporation. They were followed shortly by the Sea View Fish Company, and Joseph Goulart Fish Company. L.S. Eldredge & Son under the command of Linus Eldredge was an early pioneer in transforming New Bedford into a major port by shipping fish nationwide. The creation of the General Ice and Cold Storage Company further accelerated New Bedford's growth as a fish processing port.

As fish plants and waterfront infrastructure improved, so did the organization of the captains and owners with the creation of the Seafood Producers Association, Inc, a group focused on promoting New Bedford as a major fishing center. As a result, by the 1930's, New Bedford vessels were landing more of their catch at home instead of other ports.

Scalloping Arrives

“Landings of all kinds of fish are on the increase in New Bedford. Approximately one-half of the total amount of scallops caught in Massachusetts waters passes through New

Bedford, also a large portion of the swordfish caught off the Southern shore is brought to this port and finds a ready market.” (Atlantic Fisherman Magazine, August 1931)

At the start of the 1930's New Bedford's fleet, as well as its landings, were growing fast. In addition to the flounder and groundfish, sea scallops were also being harvested now. This was a fairly new fishery and New Bedford's fleet located relatively close to the rich George's Bank scallop beds was poised to corner the market early on. In 1934 there were ten big scallop draggers fishing on George's Bank, seven of them were from New Bedford. (Atlantic Fisherman June 1934)

By the end of the 1930's, New Bedford was the center of the sea scallop fishery. 95% of the scalloping fleet landed their catch in New Bedford.

The New Bedford scallop and groundfish fleets continued to expand throughout this time, now numbering 100 vessels. New additions of wooden draggers and scallopers were built chiefly in Fairhaven shipyards like Casey's, Pierce & Kilburn and Palmer Scott & Company. However many vessels were also built in Maine.

In the mid 1930's, the Western-rig style of dragger, already popular in nearby Stonington, Connecticut, began appearing in the New Bedford fleet. New technology allowed for a design where the pilothouse could be set in the bow of the vessel as the ship's wheel no longer needed a direct contact with the rudder. This new design enabled the crew could work the deck with a little more protection. At this stage in its development however, the otter trawl was still fished from the side of the vessel. Captain Joseph Dutra's JOHN & BILLY was one of New Bedford's early Western-rig vessels.

The end of the 1930's was marked by the infamous hurricane of 1938, which left much of New Bedford under eight feet of water. As many as two-thirds of the vessels anchored in the harbor were sunk.

World War II

With U-boats patrolling the coast, and wartime restrictions on supplies, many New Bedford vessels were tied up or could only make short trips. Captain John Aanensen's scalloper FRIARS, was one vessel that was shot at by a German sub. Several of the larger New Bedford vessels were taken by the Navy and converted into coastal minesweepers and patrol vessels. Owners received a small stipend for use of their vessels and many were returned after the war. Captain John Murley alone donated four of his fishing vessels for the war effort, two were returned.

In 1941 the New Bedford's Seafood Producers' Association and the Atlantic Fishermen's Union formed the New Bedford Fish Auction which took place at the Wharfinger building on Pier 3. It ran as a timed auction where the entire unloaded catch of a vessel was sold to the highest bidder by the ending bell.

Post-War Years

After the war New Bedford's fishing fleet continued its expansion. By 1945, New Bedford's fleet had grown to 209 fishing vessels, bringing in a catch of over 100 million pounds. Many of the New Bedford vessels built after WWII were designed by Albert Condon, a well known designer who moved to Fairhaven during this time. Condon specialized in rugged Eastern-rig designs that became known as "New Bedford" style draggers. Mystic Seaport's ROANN is one surviving example of Condon's designs.

As a sign of the changes that were to come, the first steel fishing vessels in the New Bedford fleet arrived in 1946. The CAROLE-JUNE and MABEL-MAE sister ships of 93 feet were built for Elmer Jacobsen and John Abrams by Electric Boat Company in Groton, Connecticut.

1950's-60's

The 1950's saw the arrival of new technologies in gear, navigation, and vessel design. However, even with the introduction of steel construction, much of the fleet was still comprised of wooden Eastern-rig draggers and scallopers.

In the early 1950's nets made from synthetic materials, most commonly nylon began to replace natural fiber nets. New Bedford's groundfish and yellowtail fishermen were quick to adopt this new technology. The benefits of artificial materials were immediate as the fiber didn't rot or tear up as easily on hard bottom. Besides being more durable, nylon was more buoyant, which allowed the net and cod end to rise off the bottom until it was full of fish.

Around 1954 a New Bedford fisherman named Andrew Olden received a patent for an improved scallop dredge.

In 1954 Hurricane Carol devastated New Bedford and its fishing fleet. Fifteen vessels were destroyed and many more were severely damaged. One major casualty was the Palmer Scott & Company Shipyard.

New Bedford's Georges Bank fleet started targeting yellowtail flounder in the mid 1950's. (*The Dragger*).

In the late 1950's the nation's leading scallop port began celebrating its success with the New Bedford Scallop Festival.

It was also in the 1950's that large fleets of foreign factory ships began fishing on George's Bank. These vessels, including fleets of smaller tender vessels, dwarfed the local fishing fleets in both vessel size and capacity. Vessels from Europe, including the Soviet Union were able to fish non-stop with on board processing capabilities. Fishing with enormous nets and small-mesh, it was only a matter of time before they had decimated local stocks.

In the early 1960's Gunner Gundersen, a Norwegian immigrant ushered in the use of hydraulic power among the New Bedford fleet. "With the technical experience he gained in Norway, he helped introduce the use of hydraulic power to the commercial fishing fleets along the Eastern seaboard." (from his obituary).

The launching of the F/V NARAGANSETT in 1963 marked another major advancement. This was the first American stern trawler with a net reel to haul and set the trawl. The vessel was designed and built by Luther Blount in Warren, Rhode Island. Its launch marked the beginning of the transition of New Bedford's fleet to from Eastern Rig vessels to stern trawlers.

The NARRAGANSETT was built on spec and enabled Blount to demonstrate several of his other innovations: the Blount trawl winch and the "Blount stern drive" coupled to his "Hustad" variable pitch propeller system. NARRAGANSETT which utilized the Western-rig deck arrangement was easier and safer to fish on, with a well protected working deck and nets that were hauled from the stern instead of the side. The stern trawler was an attempt to make the American fleet more competitive in the face of large foreign factory ships on George's Bank.

A year later, in 1964, Narragansett Fishing Corp. sold the NARRAGANSETT to Jacob "Jack" Jacobsen of Fairhaven, who further improved the technique of stern trawling. Over time, he developed the current version of the "A-frame" stern gantry. This superstructure at the stern of the boat replaced the old gallows frames. Jacobsen had the net reel moved to midships, just behind the after hatch. He constructed the stern gantry and the haul out stern gantry to relocate the hanging bollards and get rid of the gallows frames. This made it easier to handle roller gear in and out of the stern ramp. Jacobsen also eventually re-powered the boat replacing the 380HP Cat D353 with a 725HP Cat D348. This added power enabled the boat to be successful on hard bottom.

By the mid-1960's, 95% of all scallops were landed in New Bedford. Total landings for the port in 1965 were over 135 million pounds, valued at over \$18 million. Scallop landings were over 10 million pounds, bringing in over \$7 million. Yellowtail flounder amounted to over 59 million pounds, worth nearly \$6 million.

Of vital importance to the health of the fleet was the completion of the hurricane barrier in 1966. The barrier ensured that the New Bedford waterfront and fleet would not have to face the level of destruction wrought by the hurricanes of 1938 and 1954.

The New Bedford scallop fleet had about 60 vessels at this time. But things were beginning to change as the George's Bank scallop beds were showing signs of depletion. By 1968 scallop landings and prices were on the decline. Four large New Bedford scallop vessels left for Alaska. "They complained that two buyers could control the price of scallops at the dock" (New England Fishing Economy p. 23). The New Bedford Scallop Festival became the New Bedford Seafood Festival as scallops declined and yellowtail flounder landings increased.

In the mid to late 1960's controversy began on the New Bedford waterfront. It was a time that was known locally as "The aggravation" (as quoted in "The Dragger" by Finn). The fishermen accused the lumpers, fish buyers and processors of giving short weight on boxes of fish. Fishermen also protested the indiscriminate stealing of fish during the unloading of the catch.

Changes of the 70's

The New Bedford's scallop fishery continued to decline. The scallop fleet was down to 45 vessels; over a dozen of these would convert to dragging for yellowtail flounder. Even with diminished landings, the price of scallops stayed low. Imported scallops from Canada were seen as the reason for the continuing low scallop prices. (New England fishing economy)

Flounder, especially yellowtail, continued to take the place of scallop landings. In 1974, New Bedford landed 25% of the flounder caught nationwide.

By the mid-1970's, scallop landings and prices begin to improve for the New Bedford fleet. This was due in part to many vessels fishing off the mid-Atlantic states instead of George's Bank.

Thomas Ferreira founded F&B Rubberized, which utilizes die-cut, recycled rubber tires to build chaffing gear.

"You used to come back with 50-70-100,000 pound of Haddock' Says Lloyd Artis 'Now you're lucky if you see 5,000 in a trip.'" (spokesman-review: 2/15/76)

New Bedford's groundfish fleet, like the fishermen throughout New England, was confronting the realities of diminishing stocks. The National Marine Fisheries Service (NMFS) reported 133 foreign vessels fishing on George's Bank in 1976. New England vessels began to bring in other, previously underutilized species, to compensate. "Fish that would have been thrown overboard a few years ago, like monktail, catfish and sand dabs, are now part of the commercial haul." (Morning Record: 2/11/76)

In 1976, the federal government passed the Magnuson-Stevens Fishery Conservation and Management Act, extending US jurisdiction from 12 to 200 nautical miles and forcing the foreign factory fleets out of American waters. However, much of the damage had already been done. By the end of the 1970's, yellowtail flounder, a staple of New Bedford fishing was on the decline. Trip limits were now being enforced, including a two-month ban on yellowtail fishing in February of 1979.

1980's endings and new beginnings

The early 1980's saw the George's Bank scallop beds begin to rebound. This was followed by more local innovations. Walter and Wayne Bruce developed and patented

anti-chafing gear known as “cookies” for scallop dredges. Cookies are made from recycled tires and prevent damage to the chain bag as it scours the bottom. (patent 434972, 9/21/1982).

In 1984, New Bedford was ranked the number fishing port in the nation according to the value of its landings. However, things began to look grim for New Bedford fishermen. Fuel costs were rising and in 1984 the “Hague Line” was created by the World Court, splitting George's Bank into Canadian and American areas, creating the exclusive economic zone (EEZ) and effectively cutting off access to the Northeast peak to American fishermen. This area was well-known for large scallop beds and abundant swordfish grounds.

Not only would New Bedford lose valuable fishing grounds, but in December of 1985 a bitter strike between boat owners and the fishermen's union tore at the heart of the fishing community. The new area restrictions imposed by the Hague Line coupled with rising operating costs fueled tensions between fishermen and owners over shares of the catch, paying of trip expenses, crew hiring practices, and the fishermen's pension fund. Over 700 New Bedford fishermen and about 100 vessels were directly involved in the strike. Both union and non-union fishermen formed picket lines, some non-union vessels fished short-handed and did business in other ports. As the strike dragged on, the community took sides and although the strike continued, much of the fleet was fishing again by late February 1986. Still a sore subject among fishermen, this strife would lead to the end of organized labor in New Bedford's fishing industry. It would also play a role in the closing of the New Bedford Fish Auction at the Wharfinger Building.

1986 marked a symbolic end to the old ways in New Bedford with the launching of COLUMBIA, an Eastern-rig scalloper, and the last wooden vessel built for the New Bedford fleet. Also that year the Hathaway Machinery Company, a provider of winches and other fishing gear since 1910, closed its doors due to an injury lawsuit and factory fire.

However the 1980's also saw new beginnings. Reidar Bendiksen, a Norwegian immigrant established Reidar's Trawl-Scallop Gear and Marine Supply in 1986. With more than twenty-five years of fishing experience, many of Reidar's innovations have been adopted by the rest of the fleet.

1990's

During the 1990's, thanks to its scallop fleet, New Bedford became the nation's most valuable fishing port once again. The fleet numbered over 300 vessels, mostly scallopers and draggers but also lobster boats, long line swordfishermen and gill netters.

After the demise of the New Bedford Auction in the 1980's, the New Bedford Fish Lumper's Union ran an outdoor fish auction until the creation of the Whaling City Seafood Display Auction in 1994. Established by Richard and Raymond Canastra, the auction was modeled after display auctions in Europe in which the catch is unloaded,

culled, and displayed for prospective buyers.

New Bedford's fleet, like the rest of New England was burdened by continued restrictions and other regulatory hurdles throughout the 1990's. Only 8.6 million pounds of groundfish were landed at New Bedford in 1997, valued at just over \$10 million. In 1998, New Bedford's lucrative scallop fishery hit a 25-year low, with landings valued at \$30 million.

A New Century

New England fishing effort is significantly reduced under NOAA's vessel and permit buyback programs during the mid-1990's and early 2000's. This had the greatest impact on New Bedford's dragging fleet, with 19 vessels either scrapped or sunk. By 2002, New Bedford's offshore fleet comprises 108 scallopers and 96 draggers. (Georgianna & Shrader, 2005)

At the same time, (2002), fishermen discover that the R/V ALBATROSS IV, the scientific survey vessel of the National Marine Fishery Service was setting its net incorrectly. The Northeast Fisheries Science Center (NEFSC) admitted that over the previous two years they had incorrectly set out their survey trawl net. The cables (warps) connecting the otter doors to the net were not equal in length, leading to inaccurate fish assessments. A group of fishermen also discover problems with the way the research vessel towed this net. Even after admitting these errors, NMFS claims they had no impact on stock assessments. Fishermen and local media dub this fiasco "Trawl-Gate," driving a deeper wedge between commercial fishermen and policy makers.

New Bedford's shoreside infrastructure remains solid. "New Bedford has an estimated 75 processors, several dozen gear shops and four fuel companies. In addition there are two shipyards, two ice plants, four settlement houses and ten engine shops. It is estimated that around 300 businesses in the New Bedford region are directly involved with the fishing industry." (New Bedford's Commercial Fishing Infrastructure Report 2004)

In 2005, New Bedford fishermen question the stock assessment of yellowtail flounder. As restrictions continue to hamper the groundfish fleet, New Bedford's scallop landings keep the port on top. In 2006 New Bedford's total landings amount to 169.9 million pounds valued at \$281.2 million. (2007 Fisheries of the United States, US Department of Commerce)

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 establishes annual catch limits and paves the way for individual fishing quotas, also known as IFQ's or catch shares.

In 2008, Amendment 11 to the Scallop Fisheries Management Plan establishes a new management program for the general category scallop fishery. This includes a limited access program using IFQs for general category vessels and specific allocations for general category fisheries.

In 2010, Amendment 16 to the Multispecies Fisheries Management Plan implements catch shares for most of the northeast groundfish fleet. Vessels that elect not to join fishing in sectors fish in the “common pool” under a modified Days-at-Sea (DAS) program. This marks a major shift in management and results in significant consolidation of the groundfish fleet.

In 2011, New Bedford scallopers are allowed into Closed Areas I and II on Georges Bank with allotments of 18,000 lbs per vessel. This same year, Ocean's Fleet Company is formed from the merger of Fleet Fisheries and Oceans Alive Scallops, creating the largest producer of Atlantic sea scallops in the nation.

In 2013, New Bedford marks its 15th year as the nation's most valuable fishing port with landings worth \$379 million. However landings of groundfish decline by 30%.

In 2015, Carlos Seafood, owned by Carlos Rafael, owns the largest fishing fleet in New Bedford with 37 draggers and 12 scallop boats.

As of October 2015, New Bedford remains the number one port in the country for the dollar value of the catch with 2014 landings of 140 million pounds valued at \$329 million (down \$50 million from the previous year likely due to fluxuations in the European market impacting scallop exports). "The continued dominance of the fishing industry is a tribute to the hard work of the fishermen and the savvy decisions by the owners of fishing vessels in the city." (Mayor Jon Mitchell, New Bedford Standard Times, October 29, 2015)

Today, as many smaller ports throughout New England have lost their infrastructure, New Bedford remains a full-service port with some 148 shoreside businesses providing services for fishermen from Virginia to Maine.